

# **Ep. 195 - Water stress and the 2024 sustainability outlook**

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# Table of Contents

Call Participants .....Error! Bookmark not defined.  
Presentation .....Error! Bookmark not defined.

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# Presenters

## ATTENDEES

**Kristen Hallam**

**Unknown Speaker**

**Veronica Retamales Burford**

**Will Farmer**

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# Presentation

## Unknown Speaker

You're listening to the Economics & Country Risk podcast from S&P Global Market Intelligence. In each episode, our experts will provide you with the where, how, and when, to make decisions that transform your business.

## Kristen Hallam

Droughts and flood events in recent years have highlighted the importance of water as a strategic global resource. Climate change will impact access to water and force many countries to modify how they manage resources according to a new report from S&P Global Market Intelligence.

How will governments and businesses respond to water stress and which industries are most likely to be affected. I'm Kristen Hallam, content strategist at S&P Global Market Intelligence and your host for this episode of the Economics & Country Risk podcast.

Here to discuss the 2024 Sustainability Outlook report, part of the Big Picture series for Market Intelligence are my market intelligence colleagues, Veronica Retamales Burford, senior research analyst in our Latin America team and Will Farmer, senior research analyst in our Sub-Saharan Africa team. Thank you both for being here today. Veronica, you are the research lead for the 2024 Sustainability Outlook report. Can you give us a quick overview of the report's findings?

## Veronica Retamales Burford

Yes. Our Big Picture sustainability report focuses on water and the current and ongoing global operational impacts that are going to emanate from this as we look into 2024, but also beyond that as well and particularly the current decade. Some of the key highlights from the report include the access to sufficient water supplies and how this will be an essential facet of longer-term economic diversification plans for countries. One of the things we also explore in the report is how regional and national governments will need to make policy interventions and support businesses and communities navigating water stress.

And also one thing looking more forward is what are likely to be the efforts in terms of new infrastructure to support this, for example, the use of desalinization infrastructure that would also help companies and sectors or also to increase availability for domestic water use.

## Kristen Hallam

Thanks for that, and to illustrate some of these points that you just mentioned, we're going to focus our discussion on two regions, Latin America and Sub-Saharan Africa. Where in Latin America, do you anticipate seeing the greatest level of water stress, Veronica.

## Veronica Retamales Burford

Yes. In the Big Picture report, we use climate scenario projections for the coming decades, and we found that water stress will continue to be an issue for many years to come. And when we look at the Latin American region, water stress is likely to be particularly pronounced in Northern Chile, in the Northern Mexico and also in Southern Argentina.

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**Kristen Hallam**

And Will, where in Sub-Saharan Africa do you expect to see the greatest level of water stress?

**Will Farmer**

For us, we've been focusing on two regions in particular, the first of which is the Horn of Africa where we've seen severe droughts between 2020 and mid-2023. And now just in the last few days, we've seen reports of really intense flooding in that region, too. The second region is Southern Africa, not least because of the region's reliance on hydropower resources as well.

**Kristen Hallam**

Let's talk a little bit about the El Niño weather pattern, which we're in the middle of right now. How does that impact droughts and floodings in your region? Will, let's start with you.

**Will Farmer**

Sure. So, El Niño generally leads to heavier rainfall in Eastern Africa, but drought in Southern Africa. The La Niña weather pattern, which we've been experiencing for several years prior, tends to have the inverse effect. This switch between the two has contributed to the intensity of some of that flooding I was previously mentioning, where heavy rainfall after such a long period of drought results in lots of surface runoff.

**Kristen Hallam**

And Veronica, how about in Latin America?

**Veronica Retamales Burford**

What we're going to see in terms of the impact is going to be quite varied as well just as Will was discussing. We are going to see parts of the region, particularly Peru, for example, where we're likely to see more flooding, where other regions as well, for example, what we're seeing currently in the Panama Canal where we're seeing more drought conditions.

And when we look at the case of Argentina, that has gone through La Niña and we have seen a significant drought, El Niño might actually bring more rain and help with agriculture at this point. However, one of the things that we're measuring is how strong is El Niño likely. So if we have a more normal El Niño, that could actually bring normal level of water and potentially restart agricultural exports. However, we have a very strong El Niño. What could happen is that we can have floodings and really impacting crops as well, and we have to remember that Argentina is already experiencing high inflation, likely over 100% in 2023.

So this could also pose a factor as I was saying before, for Peru, heavy rainfall is likely to be a factor we saw already earlier this year as well, where infrastructure was damaged, but also crops as well, increasing food prices. But if we go, for example, to the northern part of Latin America and look at Mexico, we're also seeing that El Niño episode can lead to western states of Mexico to suffer more hurricanes. This is likely to negatively impact infrastructure and also tourism sector in the region. We recently had hurricane Otis in October with an estimated of 16 billion in losses in terms of infrastructure and of course, death and also huge damage.

**Kristen Hallam**

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Lots of impact and potential for impact based on what you've both described there. The report discusses the potential impact of water stress on several industries, including energy generation. Can you tell us more about what that impact looks like in Latin America, Veronica?

**Veronica Retamales Burford**

Yes. A key example for illustrating the region's exposure to extreme weather events is the risk that droughts and floods pose to electricity generation, and this is the case of hydropower. So when we look at hydropower in the region, 45% is compromised as their energy matrix.

So when we have low water levels due to changing rainfall patterns and dry periods, we can see the case, for example, of Brazil, where 65% of its electricity matrix comes from hydropower, and it did face very low reservoir levels in 2021, where we saw states of emergency imposed in five states.

But after that, we actually saw that there were periods of extreme flooding in December of that year, which cost two dams to burst and endangered 10 others. So we can see how this extreme weather patterns are also causing increasing production costs and also increasing the likelihood of shortages.

And I want to point out one last example in terms of energy matrix and hydropower, which is the current case of Ecuador. Ecuador is highly dependent on hydropower. In the last 10 years, it has actually increased the number of hydropower in the country with 79% of its electricity matrix compounded by it.

And we're currently seeing its dry season that goes from October to March. It's currently experiencing one of its most significant droughts in the last 50 years, of course, compounded by El Niño weather phenomenon. This has led the country to implement power cuts for several hours, and also they have to increase imports of energy from Colombia as well.

Similar cases are likely to become more common in the region because while we were talking before, where we have that 45% of the region compromised by hydropower. And this is likely to also lead into loss of productions for industries and also localized protests as well.

**Kristen Hallam**

Some big numbers that you gave us there. What does the picture look like in Sub-Saharan Africa, Will? How dependent are countries in that region on hydropower?

**Will Farmer**

It does vary quite a lot country to country but overall, the Sub-Saharan Africa is pretty reliant on hydropower, especially Southern African states. I mentioned just two here, Zambia and Zimbabwe, which produced 85% and 70% of their energy from hydropower, respectively.

Between 2016, 2019, and 2022 as well, droughts in those countries reduced power production and interrupted supply. This caused production delays in both of those countries, manufacturing, and mining industries and damaged inventory and equipment as well.

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To add insult to injury, companies, in some instances, were forced to invest in new equipment to regulate power searches as well because of those delays. So it's not just a simple loss of supply, but it can have lots of negative knock-on effects for businesses.

**Kristen Hallam**

You mentioned mining there, and I'm going to put a pin in that because we'll definitely come back to that, but also some big numbers there for Zambia and Zimbabwe in terms of their dependence on hydropower. Agriculture is another industry that is going to be significantly affected. How will that impact food security in Sub-Saharan Africa, Will?

**Will Farmer**

So here, I'd like to speak specifically about the El Niño weather effects. Some of my colleagues have done some modeling around this, particularly looking at the disruptive impacts that severe El Niño could have on crop production in Sub-Saharan Africa.

They think that as much as a 30% contraction of regional agricultural output, could be experienced this year and the next, if we see an El Niño phenomenon similar to that which we saw in 2014 to 2016. This does seem to vary a lot region to region and work our colleagues have done have shown that Sub-Saharan Africa would be the worst affected region from a severe El Niño weather effect from an agricultural perspective.

**Kristen Hallam**

It sounds like we may need to do a separate podcast episode on that El Niño impact there.

**Will Farmer**

I think so.

**Kristen Hallam**

But yes, for any clients who might be listening definitely check out that report from the Sub-Saharan Africa team on El Niño. Veronica, what about in Latin America, would the issue there be more about food security or disruption of agricultural exports?

**Veronica Retamales Burford**

I think it's a bit of both. We do see the effect in terms of food security, particularly around Central America and the effect it has in migration, particularly towards the United States, but when we look, of course, on agricultural exports, we have heavyweight countries that are main producers as Brazil and Argentina in the region.

And I think the case of Argentina provides an example of how weather patterns and the lack of water can really affect countries' economies. If we look at Argentina and how it was affected and continues to be affected by particularly La Niña throughout the last couple of years and the remnant effects of that, we have seen calculations of around 33 billion losses in the 2022-2023 crop season.

We also see that exporting revenues were reduced by 23% of what we have seen during 2023, so it has had a significant effect. And we're talking on a country that already has issues in terms of high inflation and also foreign reserves as well and is currently in a program with the IMF as well.

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And even the IMF has acknowledged the negative impact the drought has had in the country and particularly in the economy as well. And the country was really close in terms of default as well. So this is really a good example of how this weather patterns are really affecting a country's economy as well.

**Kristen Hallam**

So let's come back to mining operations now. They also face significant disruptions from water stress, obviously, which commodities are most likely to be affected by that? And how will that impact the countries where extraction is happening?

**Will Farmer**

So I think, and then maybe as a good example to illustrate some points you've mentioned here, there's a lot of investor interest in the country's mining sector, including water-intensive commodities to mine, but it also has a very arid climate and the country is very reliant on groundwater. So the government really concerned here over the depletion or contamination of their already limited water sources.

And we think this means there's quite a high chance of some mining production being paused at various points or license even being removed for noncompliance with regulations surrounding water usage. We actually saw uranium exploration license in Namibia being suspended last December due to contamination of water sources.

**Kristen Hallam**

So Veronica, what about in Latin America, how will water stress impact extraction there?

**Veronica Retamales Burford**

I think for Latin America will vary by country, but what we have already seen in Colombia, for example, we have seen that concerns about water usage and contamination, and also this compelled by protests as well have been a main driver behind the government's plan to implement a national ban on fracking.

We're also seeing that water scarcity and the provision of water permits remain key drivers for environmental protests against projects, particularly mining projects in the region. Peru is a case where we are seeing particularly protests against copper projects as well and the use of water.

When we look also regional and particularly because of the regions, 60% reserves of lithium as well. There have been protests related to this, particularly in Argentina and also in Chile. And as worsening water conditions are projected for the coming decades, we're likely to see increased activism from local communities on those regions.

So I think it's going to be key in terms of companies navigating this with new technology as well. And particularly, we have seen in the case of Chile, where water desalinization plants are used quite significantly, particularly in the north of the country to reduce local disputes with communities as well.

**Kristen Hallam**

Speaking of that, we've been talking mainly about impact to businesses, but obviously, people are also impacted. When you mentioned earlier, Veronica, migration and potential for social unrest, where are we most likely to see that happen due to water stress?



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**Veronica Retamales Burford**

Yes. As I was mentioning before, we are seeing that food insecurity, particularly when we have hurricanes and also severe floods has become an issue in Central America. We also see it in the Caribbean, of course, particularly because of the destruction of crops, but also the infrastructure disruption that we see.

These are factors that are exacerbating the already high risks of food insecurity that we do have in that region and are combining other cases of migration that we have as well, which is high levels of corruption, political instability, criminality, and poverty, but also other things in terms of protests, we are seeing more disputes over water usage between state communities and also state government.

We saw this in the case of Mexico between the Tamaulipas state demanding transfer of water from the Nuevo León state. And this is, of course, also going to have a business impact in terms of road cargo disruption as well, and this is likely to continue to be an issue we see for the next year.

**Kristen Hallam**

Will, anything to add from the Sub-Saharan Africa perspective?

**Will Farmer**

Yes, definitely. And from a social and risk perspective, we see water scarcity having quite a big effect in certain countries, Kenya and Nigeria bring to mind here. When there is a scarcity of rain, when droughts occur, the availability of pasture decreases quite rapidly, especially in arid and semi-arid areas.

And so what we see, especially in those two countries, but others too, are pastoralists communities, violently contesting access to pasture with each other, but sometimes with settled communities as well, as often they come south from Sahelian regions closer to more fertile areas and that can cause a lot of violent conflicts.

**Kristen Hallam**

So what kind of questions should business leaders be asking to be able to prepare for and respond to water stress challenges?

**Veronica Retamales Burford**

Businesses have to look at what national, but also at what the state and local government policy priorities regarding waters are because we do know that climate change will impact access to water. We are already seeing that physical risks are having an impact. We are seeing the Panama Canal, for example, being disrupted after its highest drought in the last 50 years. Companies should be aware of what is going to be the national government policy, but also local state policy because this would also have an impact.

Understanding this will be key because, for example, any local government opposition to even a national government policy might cause disruption for businesses as well. So if there's no synergies between what the national and the regional governments are proposing, this would also cause disruption and operational challenges for businesses as well.

**Kristen Hallam**

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So it's time to wrap up our discussion with some top takeaways for our listeners. Veronica, what would be your top takeaway from our discussion today?

**Veronica Retamales Burford**

Yes. I think my top takeaway is that water and particularly the management of water has to be viewed as a strategic resource, not only for businesses but really for countries. And this is going to be an issue that is only going to be more in the forefront.

It's going to drive environmental activism, but also operational and supply chain disruptions as really every country adapts but also the world adapts, companies and communities will really need to adapt. Governments are going to feel a real pressure by communities to forgo and increase pressure on companies regarding water concessions.

**Kristen Hallam**

And Will, what would be your top takeaway from our discussion today?

**Will Farmer**

For me, my main takeaway is an understanding of how multifaceted water stress can be as an issue, especially with the effect of El Niño and La Niña, as we've discussed, that water stress doesn't simply have to be a lack of water, but can also be extreme flooding as well.

**Kristen Hallam**

All that's left for me to do is to thank you, Veronica and Will, for sharing your insights with us. And thank you, our listeners for tuning in. If you're interested in a copy of the Sustainability Outlook report or any other 2024 Big Picture report for Market Intelligence, please use the link in the description of this episode. And let us know what you thought of this episode by interacting with us on social media and join us next week to learn more about what we see on the horizon for 2024.

**Unknown Speaker**

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